

CLAIMS

What is claimed is:

1. A method that maps any input color from an image to an output color, the method using a two-dimensional lookup table that contains mapping for a portion of the colors of the image and using color information associated with an input color from the image, the method comprising:

determining mapping information for table entries nearest to an input color;
and

interpolating the mapping information for the nearest table entries to obtain color information for an output color corresponding to the input color.

2. The method according to claim 1 wherein determining mapping information for the nearest table entries comprises:

determining mapping information of a first nearest table entry corresponding to a color represented by the lookup table and closest to the input color;

determining mapping information of a second table entry a table entry away from the first table entry in a first direction in the lookup table;

determining mapping information of a third table entry a table entry away from the first table entry in a second direction in the lookup table;

determining mapping information of a fourth table entry a table entry away from the third table entry in a first direction in the lookup table; and

wherein the input color is located between the nearest table entries.

3. The method according to claim 1 wherein the mapping information of a table entry comprises color information associated with the table entry and a mapping condition associated with the table entry.

4. The method according to claim 3 wherein the mapping condition indicates the color information associated with the table entry is to be used when the mapping condition is asserted.

5. The method according to claim 4 wherein the mapping condition indicates the color information of the input color is to be used when the mapping condition is not asserted.

6. The method according to claim 5 wherein the color information of the input color is output without performing any mapping when the mapping condition is not asserted for all the nearest table entries.

7. The method according to claim 6 wherein the brightness of the input color is mapped to an output brightness using brightness information of the table entries when the color information of the input color is output without performing any mapping.

8. The method according to claim 2 wherein the four nearest table entries are used to map the color of the input color.

9. The method according to claim 2 wherein two or one nearest table entries are used to map the color of the input color when the input color is near an edge of the look up table.

10. A system that maps any input color from an image to an output color, the system comprising:

- a two-dimensional lookup table that contains mapping for a portion of the colors of the image;

- at least one processor capable of determining mapping information for table entries nearest to an input color; and

- the at least one processor capable of interpolating the mapping information for the nearest table entries to obtain color information for an output color corresponding to the input color.

11. The system according to claim 10 wherein the at least one processor capable of determining mapping information for the nearest table entries comprises:

- the at least one processor capable of determining mapping information of a first nearest table entry corresponding to a color represented by the lookup table and closest to the input color;

- the at least one processor capable of determining mapping information of a second table entry a table entry away from the first table entry in a first direction in the lookup table;

the at least one processor capable of determining mapping information of a third table entry a table entry away from the first table entry in a second direction in the lookup table;

the at least one processor capable of determining mapping information of a fourth table entry a table entry away from the third table entry in a first direction in the lookup table; and

wherein the input color is located between the nearest table entries.

12. The system according to claim 10 wherein the mapping information of a table entry comprises color information associated with the table entry and a mapping condition associated with the table entry.

13. The system according to claim 12 wherein the mapping condition indicates the color information associated with the table entry is to be used when the mapping condition is asserted.

14. The system according to claim 13 wherein the mapping condition indicates the color information of the input color is to be used when the mapping condition is not asserted.

15. The system according to claim 14 wherein the color information of the input color is output without performing any mapping when the mapping condition is not asserted for all the nearest table entries.

16. The system according to claim 15 wherein the brightness of the input color is mapped to an output brightness when the color information of the input color is output without performing any mapping.

17. The system according to claim 11 wherein the four nearest table entries are used to map the color of the input color.

18. The system according to claim 11 wherein two or one nearest table entries are used to map the color of the input color when the input color is near an edge of the look up table.

19. A machine-readable storage having stored thereon, a computer program having at least one code section that maps any input color from an image to an output color using a two-dimensional lookup table that contains mapping for a portion of the colors of the image and using color information associated with an input color from the image, the at least one code section being executable by a machine for causing the machine to perform steps comprising:

determining mapping information for table entries nearest to an input color;
and

interpolating the mapping information for the nearest table entries to obtain color information for an output color corresponding to the input color.

20. The machine-readable storage according to claim 19 wherein the code for determining mapping information for the nearest table entries comprises:

code for determining mapping information of a first nearest table entry corresponding to a color represented by the lookup table and closest to the input color;

code for determining mapping information of a second table entry a table entry away from the first table entry in a first direction in the lookup table;

code for determining mapping information of a third table entry a table entry away from the first table entry in a second direction in the lookup table;

code for determining mapping information of a fourth table entry a table entry away from the third table entry in a first direction in the lookup table; and

wherein the input color is located between the nearest table entries.

21. The machine-readable storage according to claim 19 wherein the mapping information of a table entry comprises color information associated with the table entry and a mapping condition associated with the table entry.

22. The machine-readable storage according to claim 21 wherein the mapping condition indicates the color information associated with the table entry is to be used when the mapping condition is asserted.

23. The machine-readable storage according to claim 22 wherein the mapping condition indicates the color information of the input color is to be used when the mapping condition is not asserted.

24. The machine-readable storage according to claim 23 wherein the color information of the input color is output without performing any mapping when the mapping condition is not asserted for all the nearest table entries.

25. The machine-readable storage according to claim 24 wherein the brightness of the input color is mapped to an output brightness using brightness information of the table entries when the color information of the input color is output without performing any mapping.

26. The machine-readable storage according to claim 20 wherein the four nearest table entries are used to map the color of the input color.

27. The machine-readable storage according to claim 20 wherein two or one nearest table entries are used to map the color of the input color when the input color is near an edge of the look up table.